MOTOMAN XRC
USER'S MANUAL
JobEditor32

Upon receipt of the product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

MOTOMAN ROBOTICS EUROPE
A subsidiary of YASKAWA Electric Corporation

MANUAL NO. MRS55010

Reference list

MOTOMAN XRC Basic Operator's manual

Revision

000316
Preliminary release of this manual, valid for software version 2.0 Beta.

Revision

010803
Update to version 2.23.

1. General 5
Copyright 6
JobEditor32-kit 6
❏ *JobEditor32-kit comprises* *6*
❏ *JobEditor32-kit does not comprise* *6*
❏ *Further you may have need for* *6*
Hardware and software demands 6
2. Software installation 7
Installation 7
After installation 10
Uninstall 11
3. Basic operation 13
Basic concept and operation flow 13
❏ *Operation flow* *13*
Start JobEditor32 13
Softkey tree 14
Features 15
❏ *Key operations* *15*
❏ *Valid operations* *15*
Selecting a job 16
❏ *Opening one job* *16*
❏ *Opening multiple job at the same time* *17*
Creating a new job 18
❏ *Select parameter file* *18*
❏ *Creating a job* *18*
❏ *Set options* *19*
❏ *Set job name* *19*
Copying a job 20
Delete job 21
❏ *Delete a single job* *21*
❏ *Delete multiple job simultaneously* *21*
When no job is provided 22
❏ *Opening a parameter file* *22*
Changing a job name 23
Closing a file 24
Saving a file 25
Printing 26
Exit 27
4. Editing 29
Adding an instruction 29
Deleting an instruction 30
❏ *Deleting one line* *30*
❏ *Deleting multiple lines* *30*
Selecting multiple lines 31
❏ *Using the keyboard* *31*
❏ *Using the mouse* *31*
Copying an instruction 32
❏ *Copying one line* *32*
❏ *Copying Multiple Lines* *32*

Pasting an instruction 33
- *Paste 33*
- *Reverse 34*

Modifying an instruction 36
- *Changing numerical values (1) 36*
- *Changing numeral values (2) 37*
- *Changing characters 38*

Changing the motion type 39
Editing in the detail edit window 40
- *Changing an item 40*
- *Adding an item 41*
- *Deleting an item 42*

Searching 43
- *Searching for character strings 43*

5. Editing other items 45

Changing the speed 45
- *Changing according to speed type 45*
- *Changing speed relatively 46*

Defining control groups 47
- *Adding a combination 47*
- *Changing a combination 48*
- *Deleting a combination 48*

Defining position variables 49
Adding comments 50
Number of local variables 51
Increasing the instruction types to be used 52
- *Language level 52*
- *Parameter option 52*
- *Instruction list 53*

Displaying step Nos., I/O names, or variable names 55
Opening a call jobb 56
Changing a condition file 57
- *Changing an I/O name file (IONAME.DAT) 57*
- *Changing a variable name file (VARNAME.DAT) 58*

Editing an expression 59
Using a macro command 63
Create a binary job 64
- *Convert JBI to JBB 64*

Customizing JobEditor32 65
- *Changing the font 65*
- *Changing background colour 65*
- *Changing the comment color 65*

Change language 66

JobEditor32

Valid for software version 2.23 (MOTOMAN P/N: 441137-99)
This job editor is only valid for jobs in the XRC robot controller.

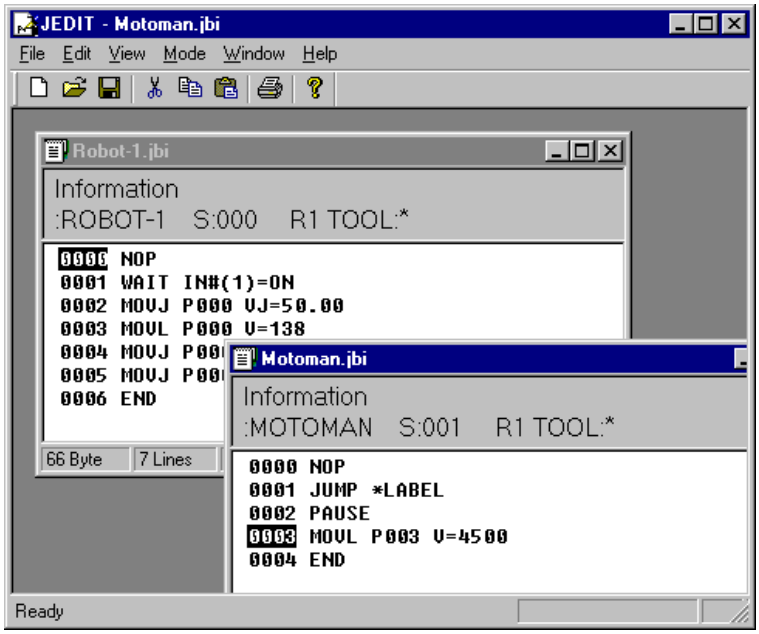


Fig.1 Main window

1. General

JobEditor32 is a 32-bit PC-software.
The purpose with JobEditor32 is....

✔ Programming in INFORM language

✔ Create new robot jobs, rename and delete jobs

✔ Edit and modify instructions

✔ Register group combinations, etc.

✔ No communication function to handle jobs between controller and PC is included.

✔ This is a multi language version of the software which gives the facility to switch between 11 european languages.

For more basic information about installation and handling of the software, icons, menu bars, etc. refer to the operator's manual for Windows 95/98 or Windows NT.

✔

✔ This manual shall always be available to the operator

✔ This user's manual comprises information about: Installation, Setup, Handling

✔ Text written i bars t.ex. [SPACE] means button on key board or in menu.

✔ Text written in *ITALIC* means text shown in display.

1.1 Copyright

The diskettes/CD for the JobEditor32 softwaremay not be copied or imparted to a third party nor be used for an unauthorized purpose. Copies may be done only for own backup.

This manual many not be copied or imparted to a third party nor be used for an unauthorized purpose.

1.2 JobEditor32-kit

■ *JobEditor32-kit comprises*

✔ One set of diskettes or one CD

✔ One hardware key

✔ One manual

✔ One registration card

■ *JobEditor32-kit does not comprise*

✔ Functions or software for file transfer between PC and robot controller. MOTOMAN software FDDWIN32 or JobExchanger32 is recommended.

■ *Further you may have need for*

✔ Programming manual for MOTOMAN XRC robot controller

✔ Operator's manual for Windows 95/98 or Windows NT

1.3 Hardware and software demands

✔ One PC type Pentium 90 MHz, 16 Mb RAM, 30 Mb disc space

✔ 3,5" diskett station or CD-ROM drive

✔ Colour monitor, at least 256-colours

✔ Mouse, supported by Windows

✔ Operating system Windows 95/98 or Windows NT 4.0

✔ Parallel port for hardware key connection

Note!

This software is valid for robot controller type MOTOMAN XRC.

Other software exist to be used together with YASNAC MRC/MRCII.

2. Software installation

Note

This chapter shows a general installation phase of any software. In this example the software FDDWIN is installed. Select the right software by choosing the appropriate software name.

2.1 Installation

There are three ways to start installation of this software, all will give the same result. The most common way is described below.

a) Put the first diskette named #1 in the disk-drive.

b) Click on the **Start** button on the menu-bar.

c) Choose **Run** from the menu.

d) Browse to drive **A:**

e) Choose the file named **SETUP.EXE**

f) Click **OK**.

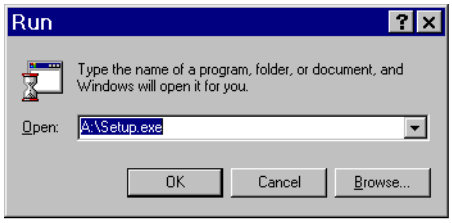


Fig.2 Choose installation file

g) Choose **OK** and the installation guide will start.

h) You can quit the installation att any time by clicking the **Cancel**-button and then confirm by **Yes**-button.

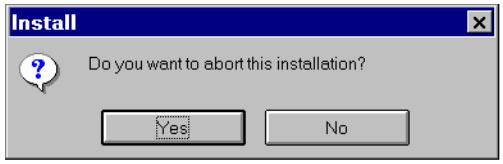


Fig.3 You can cancel installation at any time

i) Mark the language you want to use during installation. ***Note!*** This will not influence the language you use in FDDWIN32 later.

j) Click on the **OK**-button.

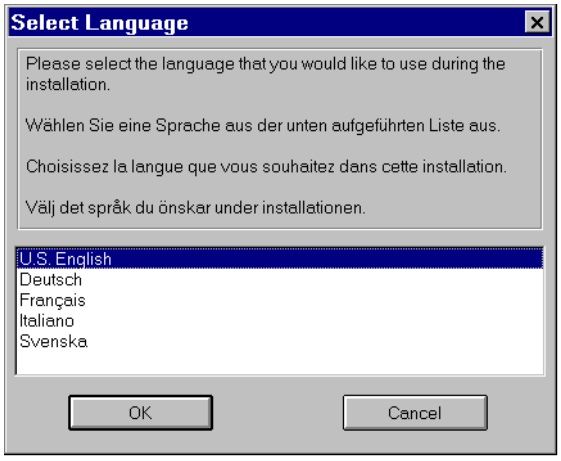

Select Language
Please select the language that you would like to use during the installation.
Wählen Sie eine Sprache aus der unten aufgeführten Liste aus.
Choisissez la langue que vous souhaitez dans cette installation.
Välj det språk du önskar under installationen.
U.S. English
Deutsch
Français
Italiano
Svenska
OK
Cancel

Fig.4 Language selection during installation

k) Pass this information screen by clicking the **Next**-button.

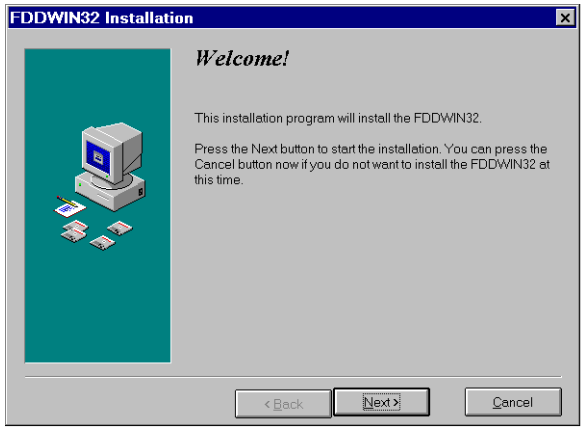

FDDWIN32 Installation
Welcome!
This installation program will install the FDDWIN32.
Press the Next button to start the installation. You can press the Cancel button now if you do not want to install the FDDWIN32 at this time.
< Back
Next >
Cancel

Fig.5 Information screen

l) Read through the license agreement and accept by clicking on the Next-button.

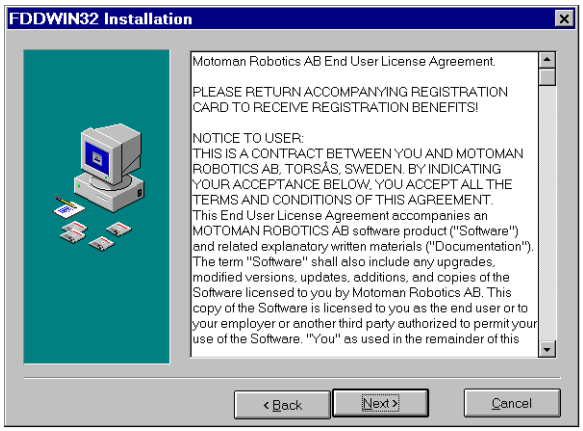

FDDWIN32 Installation
Motoman Robotics AB End User License Agreement.
PLEASE RETURN ACCOMPANYING REGISTRATION CARD TO RECEIVE REGISTRATION BENEFITS!
NOTICE TO USER:
THIS IS A CONTRACT BETWEEN YOU AND MOTOMAN ROBOTICS AB, TORSÅS, SWEDEN. BY INDICATING YOUR ACCEPTANCE BELOW, YOU ACCEPT ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT.
This End User License Agreement accompanies an MOTOMAN ROBOTICS AB software product ("Software") and related explanatory written materials ("Documentation"). The term "Software" shall also include any upgrades, modified versions, updates, additions, and copies of the Software licensed to you by Motoman Robotics AB. This copy of the Software is licensed to you as the end user or to your employer or another third party authorized to permit your use of the Software. "You" as used in the remainder of this
< Back
Next >
Cancel

Fig.6 License agreement. Accept by clicking Next.

m) Set directory for FDDWIN32. It's advisable to install the software in the directory which is set as default by the installation guide.

n) Accept by clicking **Next**-button.

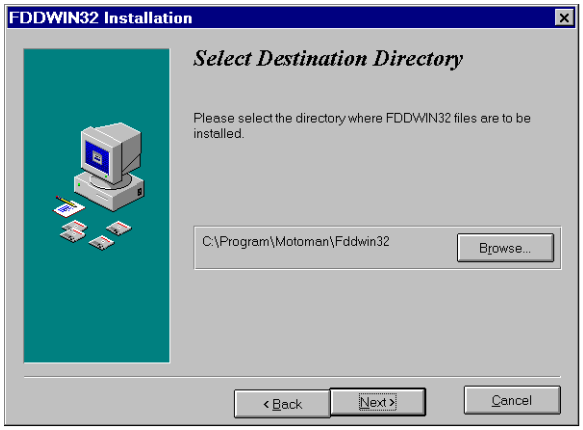


Fig.7 Choose directory

o) Accept installation process by clicking **Next**-button.

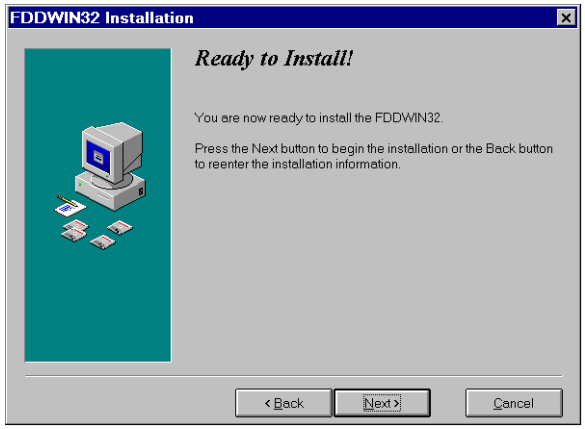

FDDWIN32 Installation
Ready to Install!
You are now ready to install the FDDWIN32.
Press the Next button to begin the installation or the Back button to reenter the installation information.
< Back
Next >
Cancel

Fig.8 Start installation

p) Installation starts.

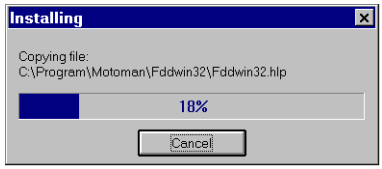


Fig.9 Installation progress counter

q) After some time you are told to enter disk #2/2.

r) Insert disk and click on OK-button.

Fig.10 Insert disk #2

s) The installation is finished and the last screen appears.

t) Accept installation by clicking the **Finish**-button.

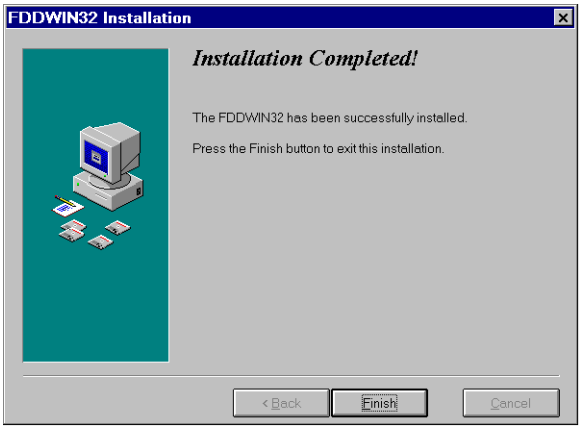


Fig.11 Installation complete

u) Before it is possible to run the software, the hardware key must be installed on the parallel port.

2.2 After installation

After installation, fill in and return the registration card to Motoman Robotics Europe AB.

During installation the main directory is automatically created and all necessary files are installed in the specified drive.

In the end of the setup a program group (MOTOMAN) and a icon is created. To start FDD for Windows just double-click on the **Start Menu**.

If you want to create a shortcut to FDDWIN32, see Windows manual for further information

2.3 Uninstall

As in all WIN95/NT softwares there are an uninstall facility if you want to remove the software from the hard disk.

a) Start the **Control panel** from the start menu. Select **Add/Remove** button from the menu.

b) Mark the line **FDDWIN32** from the menu.

c) Click **Add/Remove** button.

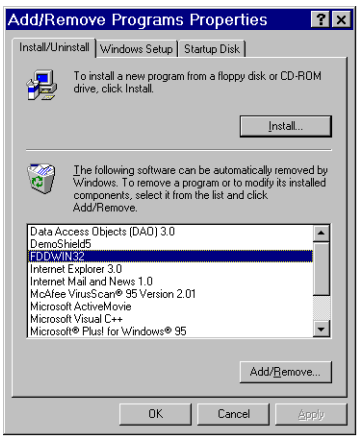

Add/Remove Programs Properties
Install/Uninstall
Windows Setup
Startup Disk
To install a new program from a floppy disk or CD-ROM drive, click Install.
Install...
The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.
Data Access Objects (DAO) 3.0
DemoShield5
FDDWIN32
Internet Explorer 3.0
Internet Mail and News 1.0
McAfee VirusScan® 95 Version 2.01
Microsoft ActiveMovie
Microsoft Visual C++
Microsoft® Plus! for Windows® 95
Add/Remove...
OK
Cancel
Apply

Fig.12 Mark the FDDWIN32 software

d) Activate uninstall guide by **Next**-button.

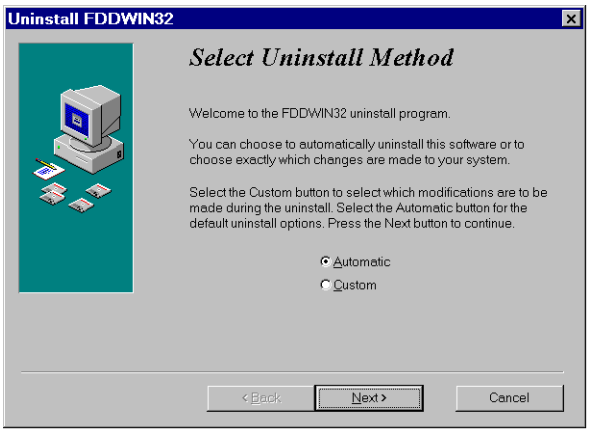

Uninstall FDDWIN32
Select Uninstall Method
Welcome to the FDDWIN32 uninstall program.
You can choose to automatically uninstall this software or to choose exactly which changes are made to your system.
Select the Custom button to select which modifications are to be made during the uninstall. Select the Automatic button for the default uninstall options. Press the Next button to continue.
Automatic
Custom
< Back
Next >
Cancel

Fig.13 Automatic uninstall

e) End the operation by clicking the **Finish**-button.

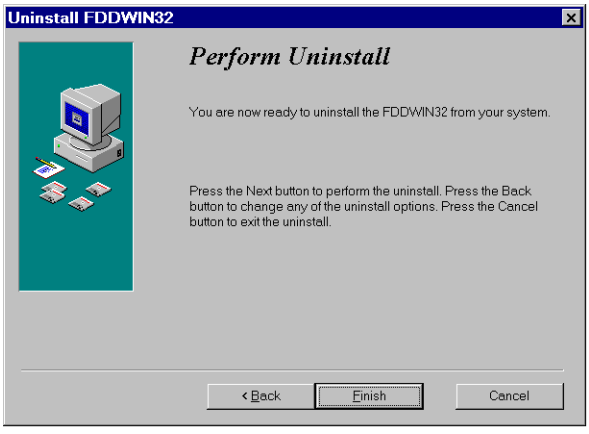

Uninstall FDDWIN32
Perform Uninstall
You are now ready to uninstall the FDDWIN32 from your system.
Press the Next button to perform the uninstall. Press the Back button to change any of the uninstall options. Press the Cancel button to exit the uninstall.
< Back
Finish
Cancel

Fig.14 Uninstall

3. Basic operation

3.1 Basic concept and operation flow

✔ JobEditor32 uses the JBI-file directly. Other types of editing tools use the CMOS.HEX.

✔ JobEditor32 cannot read the CMOS.HEX.

✔ To create and modify a robot job, the JBI-file and the ALL.PRM file must be placed in the same directory in the PC.

■ *Operation flow*

This software requires only parameter files. To edit the same instructions as the programming pendant, save the parameter file from the programming pendant in advance.

a) Save the parameter file (ALL.PRM) from the robot into the PC. Use a file transfer software, like FDDWIN32.

b) Create a folder for the specific file/robot. Put the JBI-file and the parameter file in the same directory. Name the directory e.g. like the robot.

c) Start the JobEditor32 and open the JBI-file.

d) Make the modifications and save it.

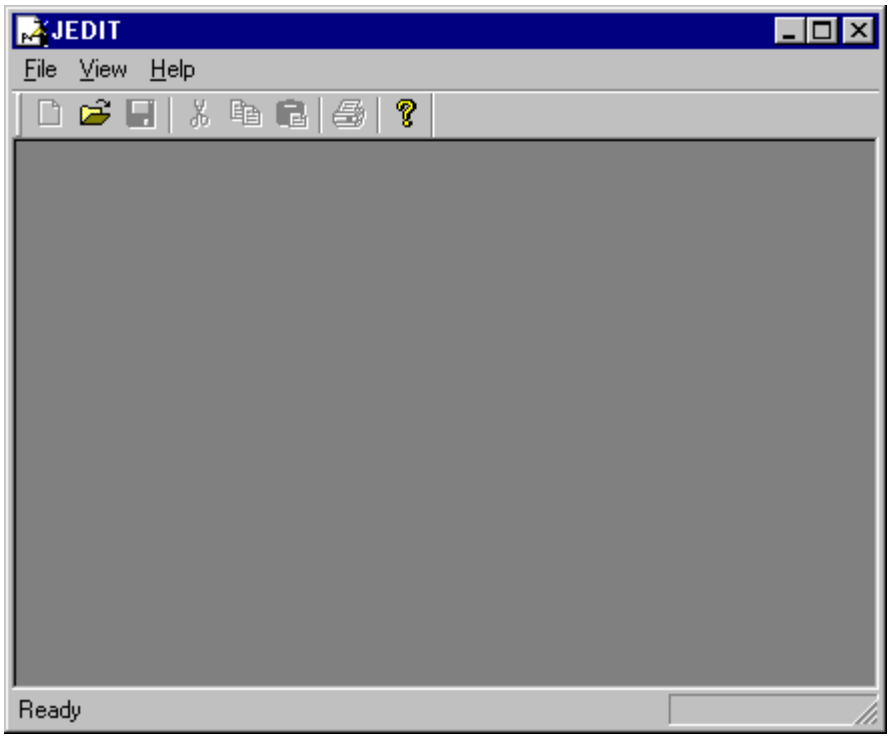
e) Load the file back to the robot controller.

3.2 Start JobEditor32

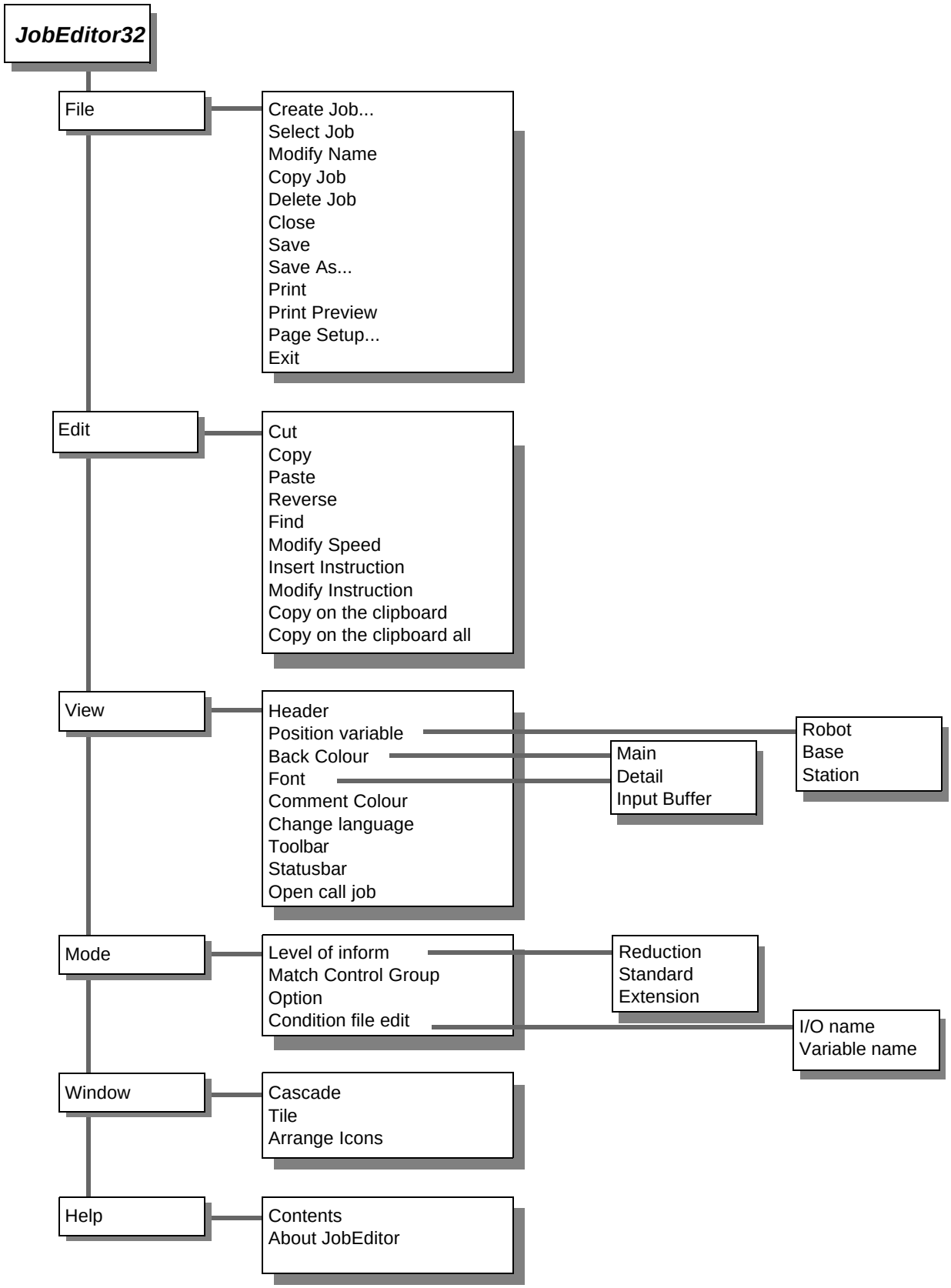
The software is started from the Windows menu. As default the software is installed in the group: [Program] - [Motoman] - [JobEditor].

a) Click on the program icon.

b) Main window is started.



3.3 Softkey tree



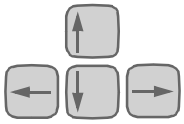
3.4 Features

JobEditor32 is a job editing software for the MOTOMAN XRC robot controller. JobEditor32 is used in the same way as the programming pendant.

■ *Key operations*

The displays where the editing can be done, such as the job contents, the line editing and the detail editing display are the same as those for the programming pendant. Anyone who can edit with the programming pendant can easily use the software.

The programming pendnat keys korrespond to the keys as follows.

XRC p-pendant	PC keys	
Cursor key	Arrow keys	
Select key	Space key	
Enter key	Enter key	

■ *Valid operations*

File functions	Create new job
	Open existing job
	Change job name
	Copy job
	Delete job
Editing functions	Add instruction
	Change instruction
	Delete instruction
	Copy instruction
	Paste instruction
	Reverse paste instruction
	Edit multiple jobs
	Edit line
	Edit details
	Search
	Change interpolation type
	Change speed
	Register group combinations
	Change language level
Display functions	Display header
	Display auxiliary header
	Display position variables

3.5 Selecting a job

Various basic parameter files and jobs are provided in "Sample" directory setup in the computer during installation.

■ *Opening one job*

a) Click [File].

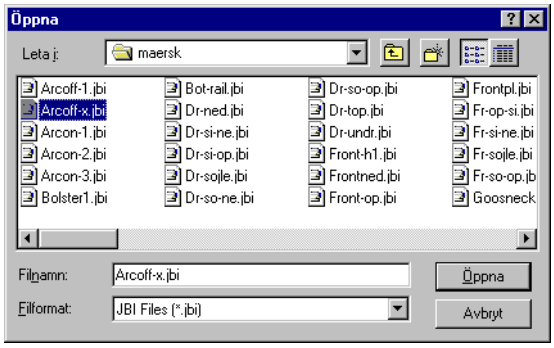
b) Click [Select Job...] or use [Ctrl]+[o] keys.

c) The dialog box appear.

d) Go to the directory you want to open.

e) Mark the file to be opened.

f) Click [Open].



Note!

The XRC parameter file must be available in the same directory. If there is no ALL.PRM file, following warning will be displayed.

■ *Opening multiple job at the same time*

a) Click [File].

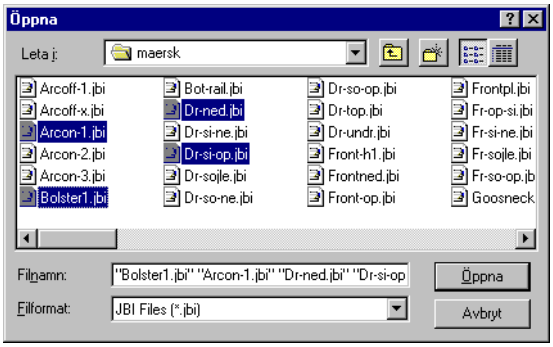
b) Click [Select Job...] or use [Ctrl]+[o] keys.

c) The dialog box appear.

d) Go to the directory you want to open.

e) Mark the files to be opened. By holding [Ctrl] key down, several files may be selected at the same time.

f) Click [Open].



3.6 Creating a new job

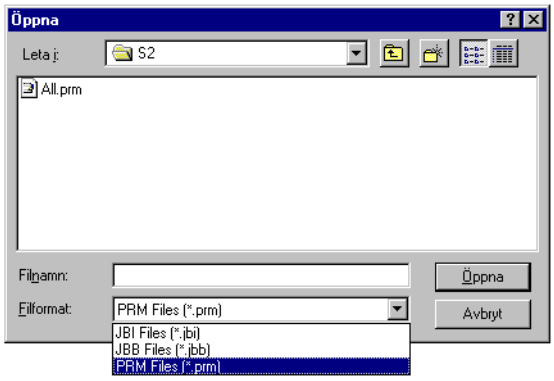
Note!
Before it is possible to create a new job, the parameter file for the specific robot must be selected.

■ *Select parameter file*

a) Click [File].

b) Click [Select Job] or use [Ctrl]+[o] keys.

c) The [Open] dialog box appears.



d) Change seletion of file types to *.PRM.

e) All avalilable parameterfiles in selected directory appears.

f) Mark the All.PRM file.

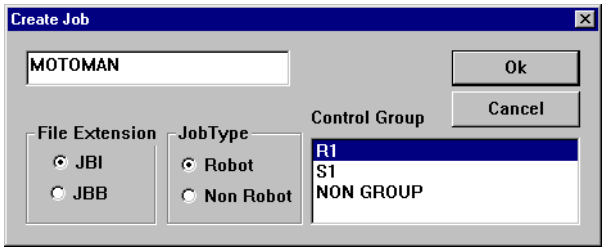
g) Click [Open].

■ *Creating a job*

a) Click [File].

b) Click [Create Job...] or use [Ctrl]+[n] keys.

c) The [Create Job] dialog box appear.



■ *Set options*

d) Select [JBI] or [JBB] file type.

e) Select [Robot] or [Non Robot] job type. A robot job contains position data and a concurrent job doesn't.

f) Select control group. If wanted group doesn't exist it must be created first. See separate chapter "**Group combination registry**".

■ *Set job name*

g) Enter a job name using lower-case letters, maximum 8 characters.

h) Click [OK].
If the job name already exist in the folder, a warning message is displayed.

i) A new job appears.

Note!
New job is automatically saved in the same directory as the ALL.PRM-file.
File extension may be switched between JBI and JBB.
JBI is ASCII coded, suitable for MOTOMAN XRC controller.
JBB is binary coded, suitable for PC/XRC (**not for XRC robot controller**).

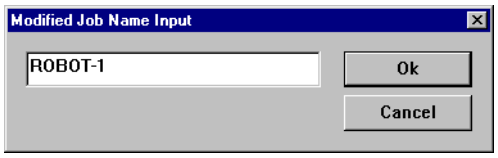
3.7 Copying a job

a) Open the job that shall be copied.

b) Click [File].

c) Click [Copy Job].

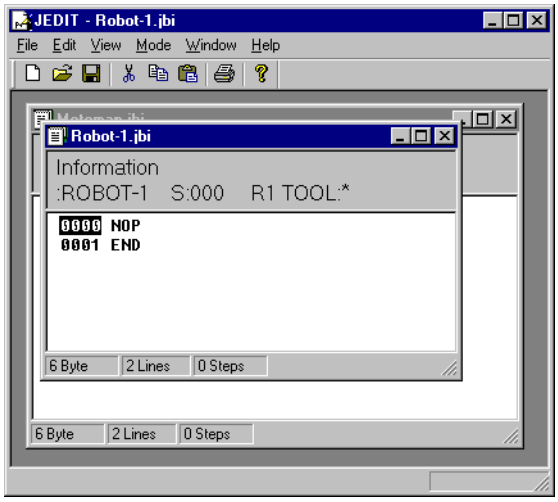
d) The [Copied Job Name Input] dialog box appears.



e) Enter the new job name.

f) Click [OK].

g) The new job appears in the main window.



Note!
An existing name can not be be used. To select the name of an existing job, delete the existing job first.

3.8 Delete job

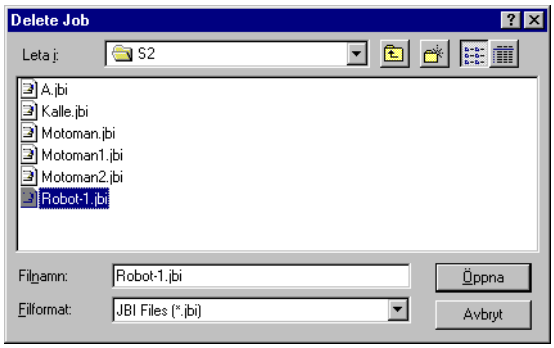
Use windows explorer to delete a job file.

■ Delete a single job

a) Click [File].

b) Click [Delete File].

c) The [Delete Job] dialog box appears.



d) Select the job to be deleted.

e) Click [Open].

■ Delete multiple job simultaneously

Refer to the earlier chapter "**Opening multiple job at the same time**".

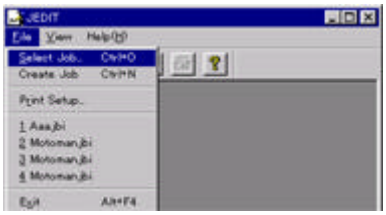
3.9 When no job is provided

When no job is provided, select the parameter file to create an environment for making a new job.

■ *Opening a parameter file*

a) Click [FILE]

b) Click [SELECT JOB]

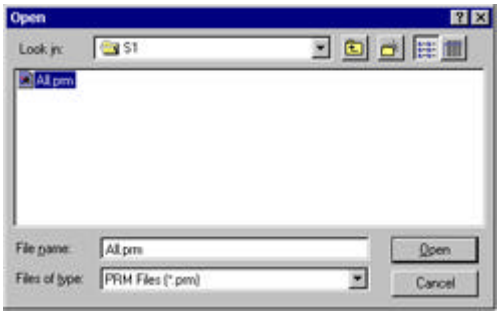


The [OPEN] dialog box appears.

c) Click [PRM Files]
PRM Files appear.

d) Click [All.prm].

e) Click [OPEN]

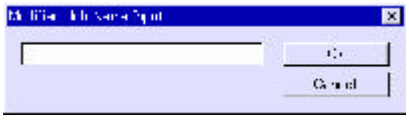


3.10 Changing a job name

a) Click file

b) Click [Modify name]

The [Modified job name input] dialog box apperas



c) Enter a job name using upper-case letters, maximum 8 characters.

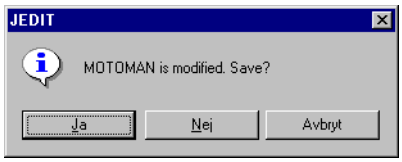
Any existing job cannot be specified for the Modified Job Name Input. If selected, the following message appears. Enter a different name. To select the name of an existing job for the Modofoed Job Name Input, delete the existing job first.

3.11 Closing a file

a) Click [File].

b) Click [Close].

c) If the file has been created or modified in any way the following dialog message is displayed.



d) Choose [Yes] to save the changes.
Choose [No] to close without saving.
Choose [Cancel] to go back to editing mode.

3.12 Saving a file

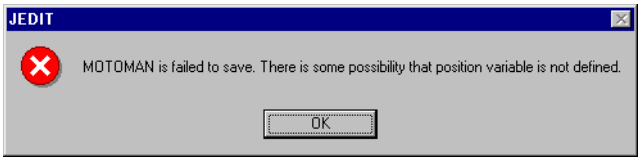
a) Click [File].

b) Click [Save] or use [Ctrl]+[s] keys.

Note!

The following error message may appear when saving a file. This message appears when the position variable is not defined, although there is an instruction using a position variable in the job which to be saved.

Select [View] and then [Position Variable] to define the position variable.

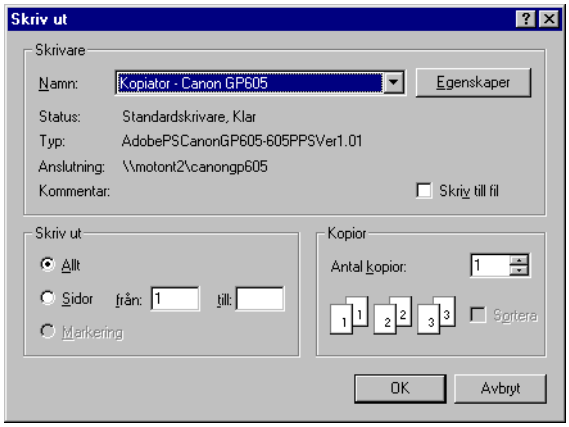


3.13 Printing

a) Click [File].

b) Click [Print] or use [Ctrl]+[p] keys.

c) The [Print] dialog box appears.



d) Click [OK].

3.14 Exit

a) To quit the software, click [File].

b) Click [Exit].

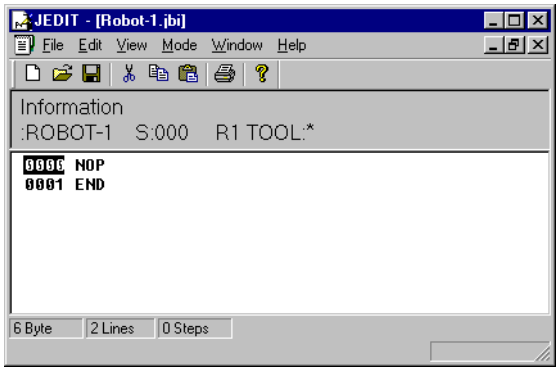
Note!
If there is any job that has not been saved when the exit command is used, a dialog will appear to ask if the edited job is to be saved.

4. Editing

4.1 Adding an instruction

Press the cursor keys to highlight the address of the line where an instruction is to be added. This can be also done by clicking the mouse directly.

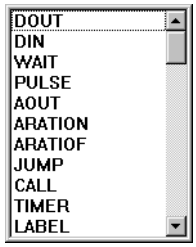
a) Move the address of the line where an instruction is to be inserted.



b) Press the [SPACE] key or click [EDIT] on the menu and then click [INSERT INSTRUCTION].

c) The [Instruction List] dialog box appears.

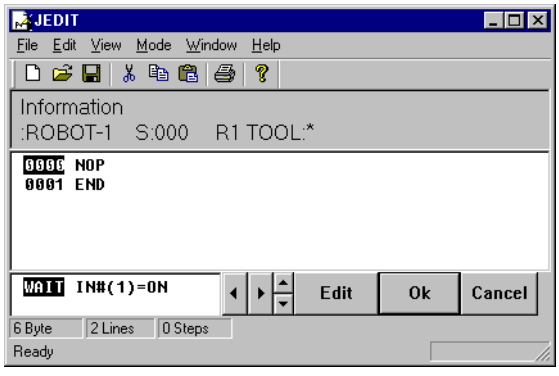
Press [ESC] key to release the ADD-mode



d) Select a line by moving the cursor or by clicking the mouse.

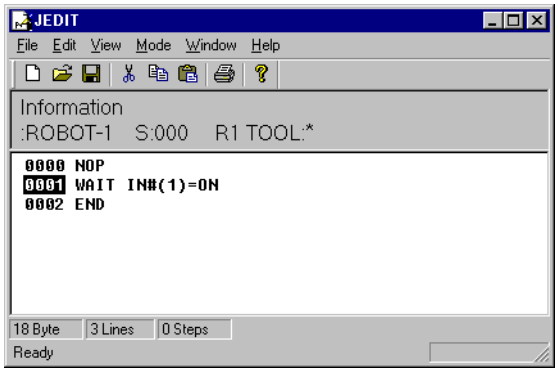
e) Press the [ENTER] key or double-click the mouse.

f) The line-edit box appears in the lower-left of the window.



g) Press the [ENTER] key or click [OK].

h) The instruction has been inserted.



4.2 Deleting an instruction

■ *Deleting one line*

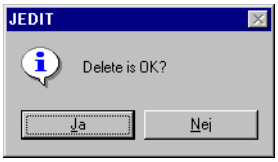
i) Select the address or instruction to be deleted.

j) Click [EDIT].

k) Click [CUT].

a) The dialog box appears asking if you are sure you want to delete the line.

b) Click [YES].



Since the cut contents are copied to the buffer, they can be pasted on another place or job.

■ *Deleting multiple lines*

Select multiple lines to delete at one time, and perform the same operation as described in "**Deleting one line**."

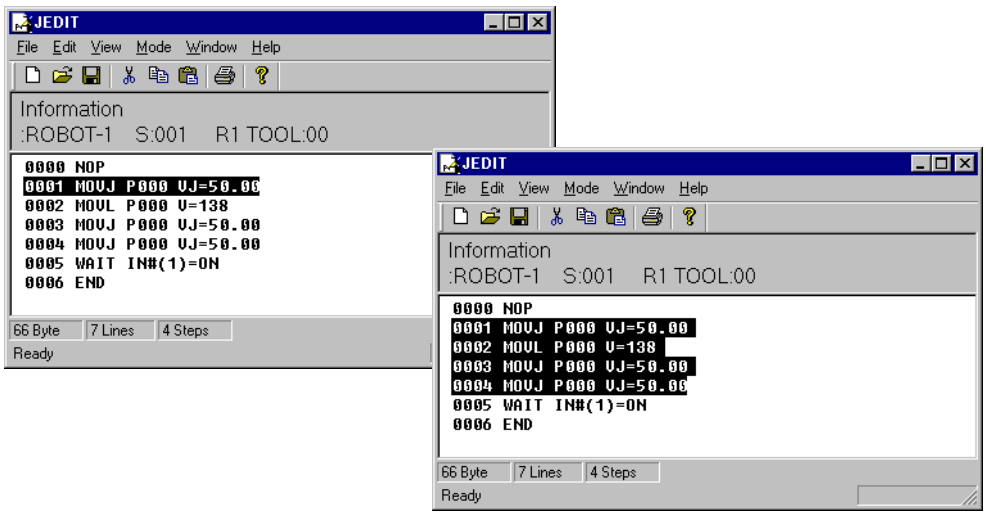
4.3 Selecting multiple lines

■ *Using the keyboard*

a) Move to the first line to be selected.

b) Press the [SHIFT] key.

c) Move the cursor holding the [SHIFT] key down to select additional lines.



■ *Using the mouse*

a) Click the first line to be selected.

b) Drag over adjacent lines to select multiple lines.

Note!
To select multiple lines using the mouse, it is very important to include all letters/ figures in the last line to be selected. Otherwise, the selection is neglected.

4.4 Copying an instruction

■ Copying one line

a) Move to the lin to be copied.

b) Click [EDIT].

c) Click [COPY] or [Ctrl]+[c].

Perform the same operation as described in 4.5 "Pasting an Instruction."

There is no limitation to the number of instructions that can be copied. Move instructions can also be copied, but pay attention operating.

■ Copying Multiple Lines

Perform the procedure described in "**Selecting multiple lines**," and then perform the procedures as described in steps of "**Copying one line**."

4.5 Pasting an instruction

Note!
Pasting or reverse pasting always take place underneath the line of the cursor.

■ *Paste*

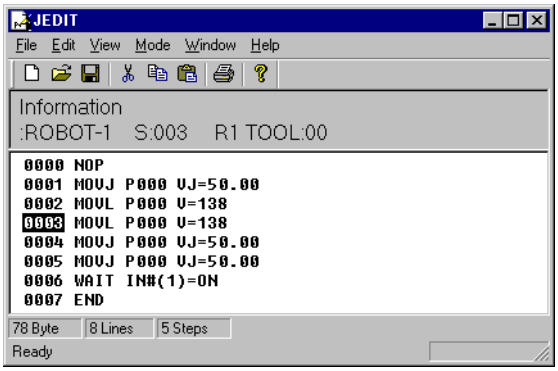
a) Move to the line where data is to be pasted.

b) Click [EDIT].

c) Click [PASTE] or [Ctrl]+[v].

d) A dialog box appears asking if you are sure you want to paste the data.

e) Click [YES].

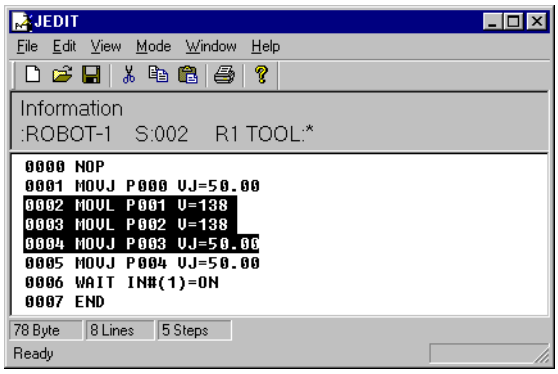


■ *Reverse*

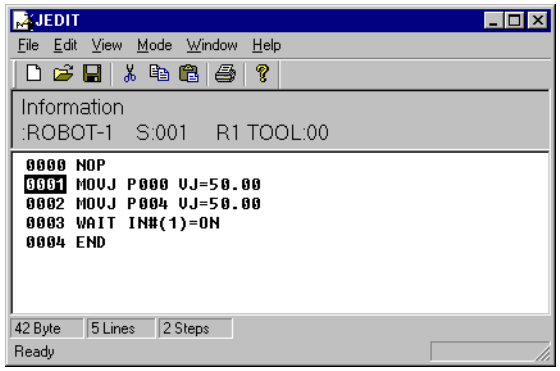
"Reverse" pastes several copied lines in the opposite order of how they were copied.

To create a group of move instructions for returning, copy the group of move instructions for going and reverse-pasting them.

a) Select multiple lines and copy them.



b) Move to the position where the data is to be inserted. The data will be inserted on the next line



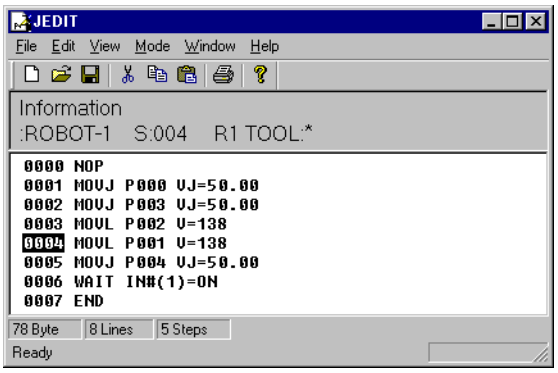
c) Click [EDIT].

d) Click [REVERSE].

e) A dialog box appears asking if you are sure you want to reverse-paste the data.

f) Click [YES].

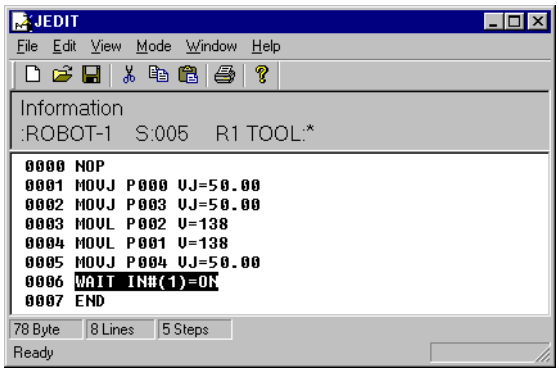
g) The data has been reverse-pasted.



4.6 Modifying an instruction

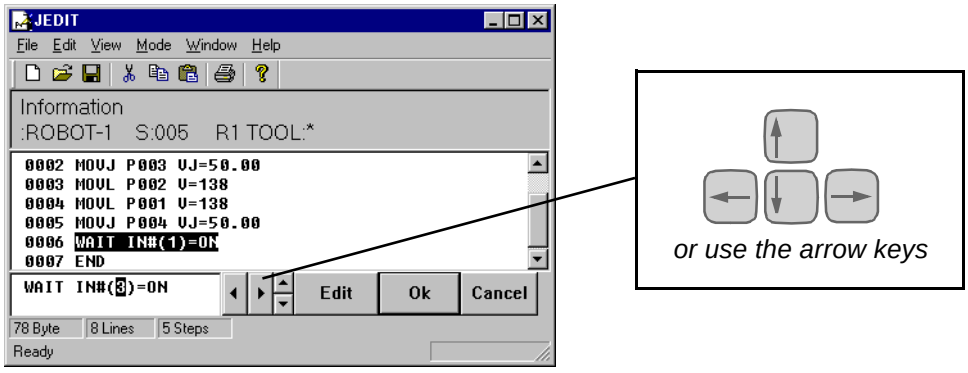
■ Changing numerical values (1)

a) Move to the instruction line to be edited.



b) Press the [SPACE] key or click [EDIT] on the menu and then click [INSERT INSTRUCTION].

c) The line-edit box appears in the lower part of the window.



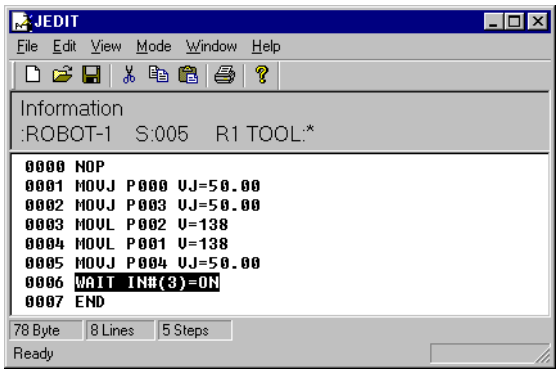
d) Press the [left/right buttons] to manouver to right position.

e) Press the [upp/down buttons] until obtaining the desired value.

f) Press the [ENTER] key or click [OK].

g) To cancel the changes, press the [ESC] key or click [CANCEL].

h) The new data appears in the main window.

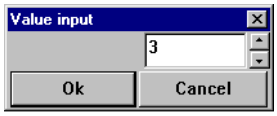


■ *Changing numeral values (2)*

Select the numeral value for line editing with the same procedures as described in "**Changing numeral values (1)**".

a) Press the [SPACE] key.

b) The [Value Input] dialog box appears.



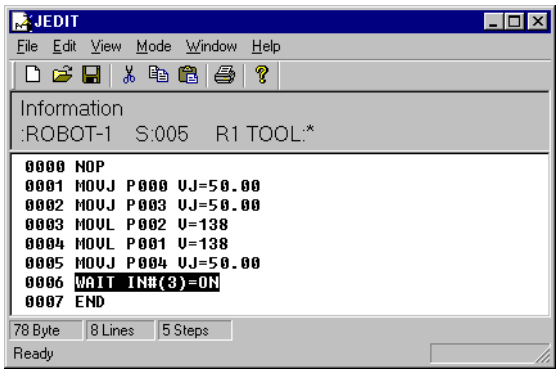
c) Change the value, using one of these methods.

1) Enter the value directly.

2) Press the [up/down buttons].

d) Press [ENTER] or click [OK].

e) The new data appears in the main window.

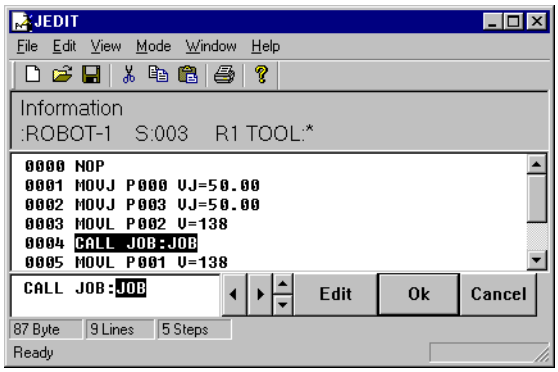


Lines cannot be moved in the main window during line editing.

■ *Changing characters*

a) Move to the instruction line to be edited.

b) Press the [SPACE] key or click [EDIT] on the menu and then click [INSERT INSTRUCTION].

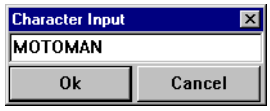


c) Press the [Arrow] keys to go to desired item.

d) Press the [SPACE] key.

e) The [Character Input] dialog box appears.

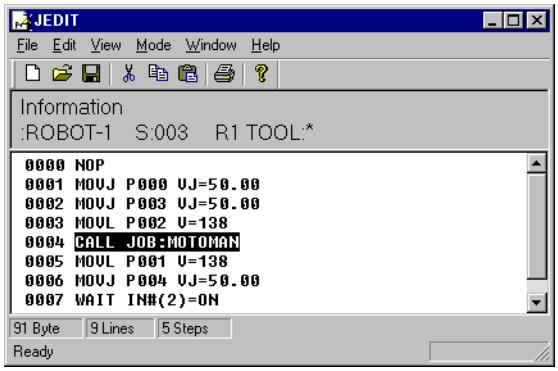
f) Enter the character string.



g) Click [OK].

h) Press the [ENTER] key or click [OK]. To cancel the changes, press the [ESC] key or click [CANCEL].

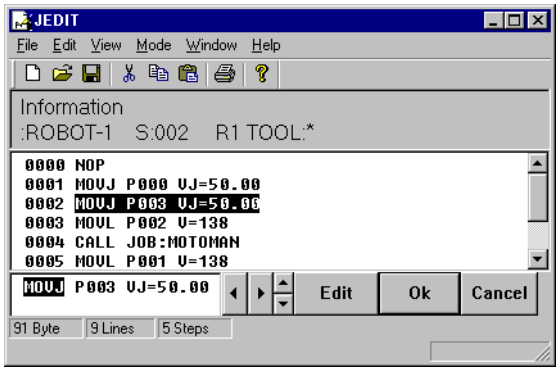
i) The new data appears in the main window.



4.7 Changing the motion type

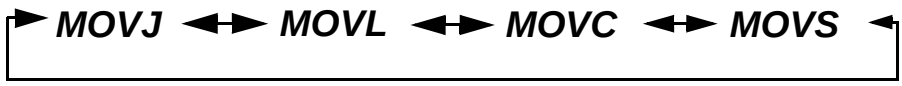
a) Move to the instruction line to be edited.

b) Press the [SPACE] key or click [EDIT] on the menu and then click [INSERT INSTRUCTION].



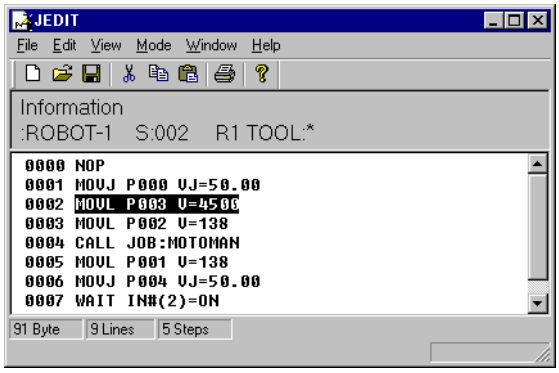
c) The line-edit box appears in the lower part of the window.

d) Press the [up/down buttons] to select the desired motion type.
Motion type can be changed in this order. Speed is relative speed and converted automatically.



e) Press the [ENTER] key or click [OK]. To cancel the changes, press the [ESC] key or click [CANCEL].

f) The instruction line with the new motion type appears in the main window.

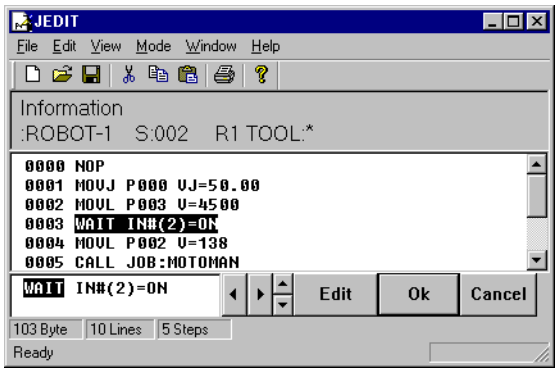


4.8 Editing in the detail edit window

■ Changing an item

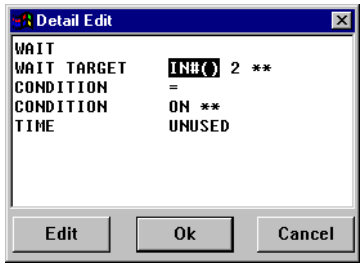
a) Move to the instruction line to be edited.

b) Press the [SPACE] key or click [EDIT] on the menu and then click [INSERT INSTRUCTION].



c) The line-edit box appears in the lower part of the window.

d) Press the [SPACE] key.



e) The Detail Edit window appears.

f) Use the [Arrow] keys to move the cursor to the item to be changed.

g) Press the [SPACE] key.

h) A selection list appears.

i) Use the [up/down buttons] to select an item.

j) Press the [ENTER] key to select. Press [ESC] key to cancel.

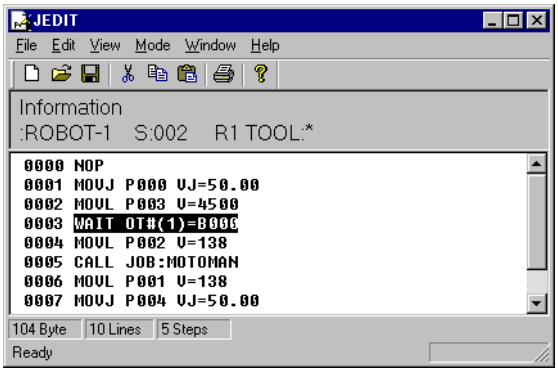
k) The new item appears in the Detail Edit window.

l) Click [OK].

m) The line-edit box appears in the lower-left of the window.

n) Press the [ENTER] key.

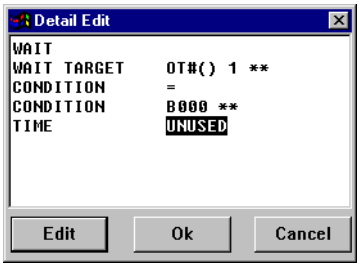
o) The new instruction appears in the main window.



■ *Adding an item*

To call up the Detail Edit window, perform the same procedure as described in steps above of "**Changing an item**."

a) Use the [Arrow] keys to move the cursor to the item to be changed.



b) Press the [SPACE] key.

c) A selection list appears.

d) Use the [up/down buttons] to make a selection.

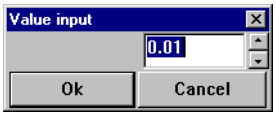
e) Press the [ENTER] key.

f) The added item appears in the Detail Edit window.

g) Move the cursor to the numerical data when the numerical value of the item is to be changed.

h) Press the [SPACE] key.

i) The [Value Input] dialog box appears.



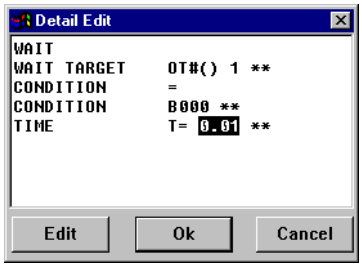
j) Change the value by using one of the following methods.

1) Enter the value directly.

2) Press the [up/down buttons] to set value.

k) Click [OK].

l) The Detail Edit window appears with the new value.



Perform the same procedure as described "**Changing an Item**" to return to the main window.

■ *Deleting an item*

To call up the Detail Edit window, perform the same procedure as described in steps of "**Changing an item**."

a) Use the [Arrow] keys to move the cursor to the item to be deleted.

b) Press the [SPACE] key.

c) A selection list appears.

d) Use the [up/down] key to make a selection.

e) Press the [ENTER] key.

f) The Detail Edit window appears with the item deleted.

Perform the same procedure as described in "**Changing an Item**" to return to the main window.

4.9 Searching

■ Searching for character strings

a) Click [Edit]

b) Click [Find]

c) Enter the character string to be found (disregarding whether upper-case or lower-case characters are used.)

d) Click [Next]
The search for the character string starts.

The search starts from the cursor´s position and goes down the list.

Moving the line number or step number

To call upp the [Find and Jump] dialog box, perform the same procedure as described in above.

a) Select a line no. or step no.

b) Click to select the no.

c) Click [Jump]
The search for the line no or step no. starts.

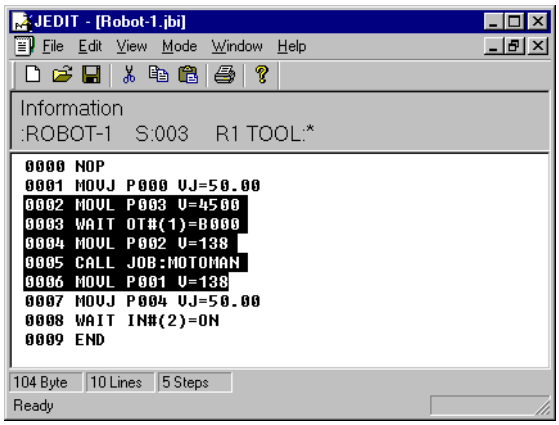
The search starts from the cursor´s position and goes down the list.

5. Editing other items

5.1 Changing the speed

■ Changing according to speed type

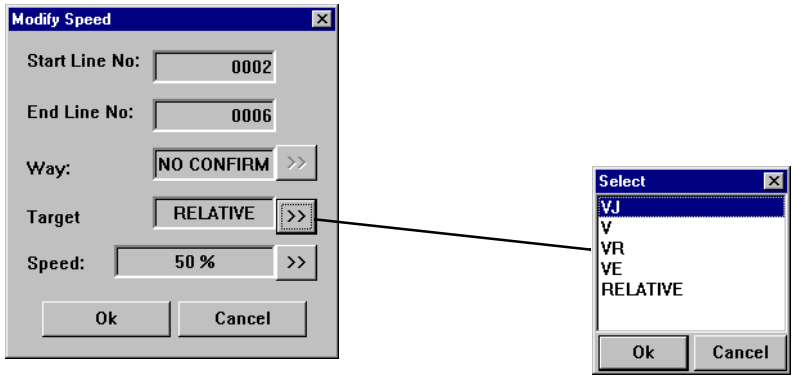
a) Select the range to be changed.



b) Click [Edit].

c) Click [Modify Speed].

d) The [Modify Speed] dialog box appears.



e) Select [Target Type]. Select the type to be changed.

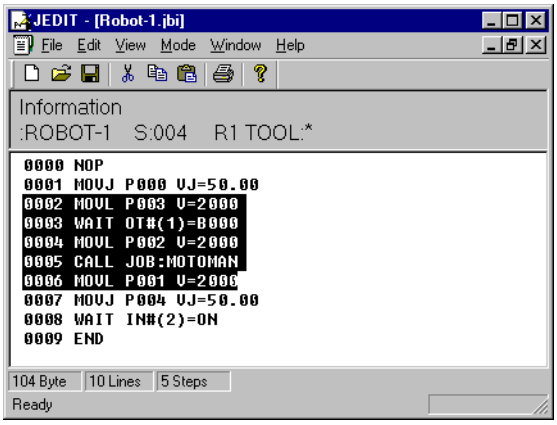
f) Click [OK].

g) Select [Speed].

h) Write the new value.

i) Click [OK].

j) Click [OK] to activate changes.



Note!
If "Target Type" is set to V, only this type is changed within the selected range. Depending on type of motion, speed is set in percentage or in mm/min.

■ *Changing speed relatively*

a) Call up the [Modify Speed] dialog box like in previous chapter.

b) Select [Target Type].

c) Select [RELATIVE].

d) Select [Speed].

e) Set value to e.g. 50 (reduce by 50%).

f) Click [OK].

g) Click [OK] to activate changes.

Note!
If "Target Type" is set to RELATIVE, all speed settings are reduced/increased by the same ratio.

5.2 Defining control groups

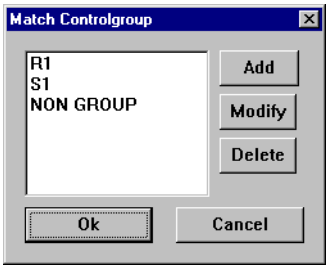
When there is more than one control group, the combinations can be defined. Unless defined here, the control group to be selected for new job creation, etc. does not appear in the window when creating a new job.

■ *Adding a combination*

a) Click [Mode]

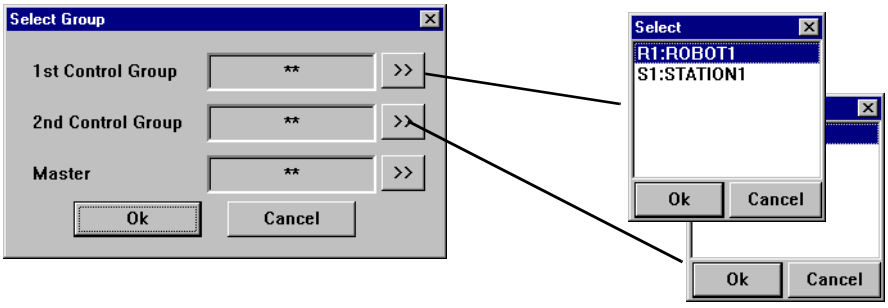
b) Click [Match Control Group].

c) The [Regist Match of Groups] dialog box appears.



d) Click [Add].

e) The [Select Group] dialog box appears.



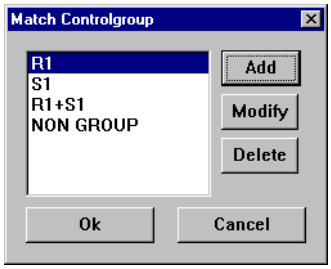
f) Select [1st Control Group]. Click [OK].

g) Select [2nd Control Group] if needed. Click [OK].

h) Select [Master] if needed. Click [OK].

i) R1+S1 has been added to the [regist Match of Groups] list.

j) Confirm by clicking [OK].



■ *Changing a combination*

Call up the [Regist Match of Group] dialog box, described in the section above.

a) Select the combination to be changed.

b) Click [Modify].

c) The [Select Group] dialog box appears.

d) Redefine the group combinations, according to the method described in the section above.

e) Click [OK] to activate the changes.

■ *Deleting a combination*

Call up the [Regist Match of Group] dialog box, described in the section above.

a) Select the combination to be deleted.

b) Click [Del].

c) The group combination has been deleted. Click [OK] to return to main window.

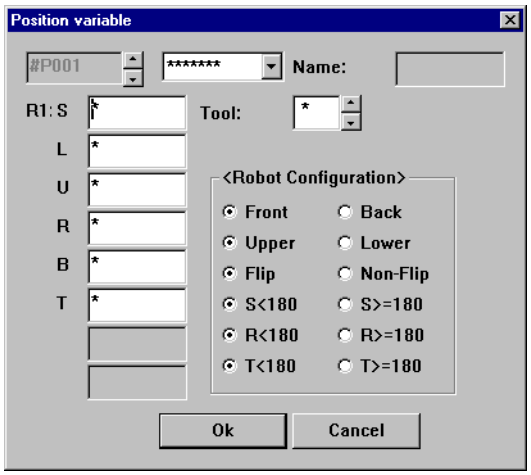
5.3 Defining position variables

a) Click [View].

b) Click [Position Variable].

c) Click [Robot], [Base] or [Station].

d) The [Position Variable] dialog box appears.



e) Select position variable number.

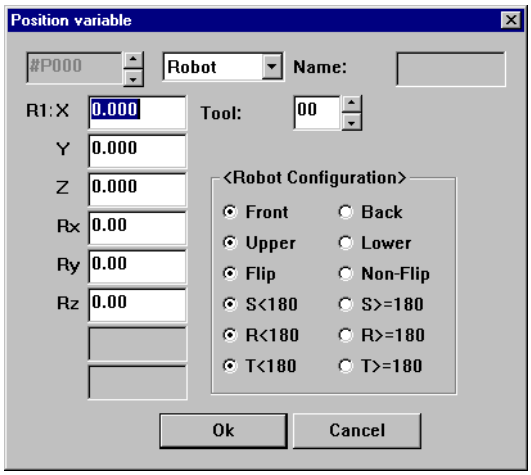
f) Select coordinate system.

g) Set [Value].

h) Set [Tool] number.

i) Set [Robot Configuration].

j) Save the settings by clicking [OK].



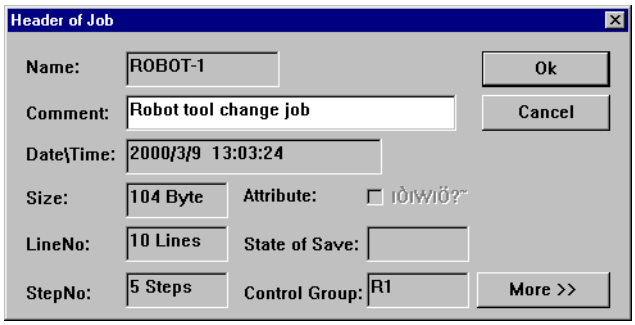
Note!
To create a job using position variables, the position variable must be defined in this window before saving the data.

5.4 Adding comments

a) Click [View].

b) Click [Header].

c) The [Header of Job] dialog box appears.



d) Enter comment character string.

e) Click [OK].

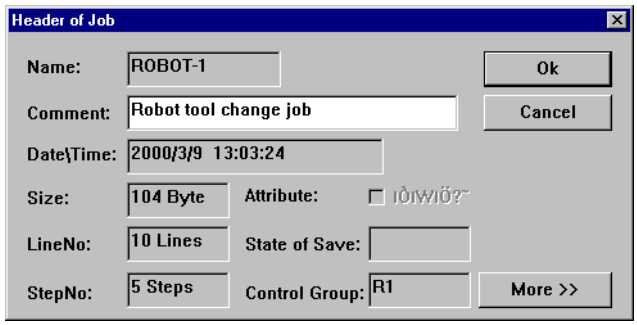
Note!
Maximum 32 characters may be used in the comment string.

5.5 Number of local variables

a) Click [View].

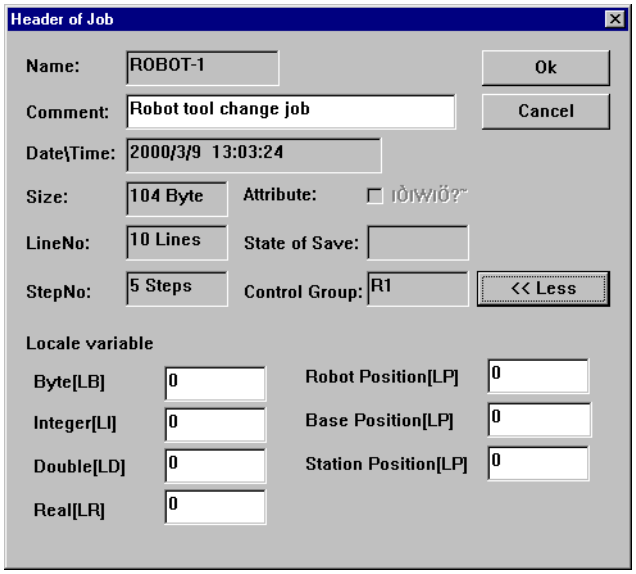
b) Click [Header].

c) The [Header of Job] dialog box appears.



d) Click [More].

e) The [Local Variable Num] text box appear.



f) Set the number of local variables for each type.

g) Save settings by clicking [OK].

Note!
The [More] button may be disabled by parameters to prevent using of local varables.

5.6 Increasing the instruction types to be used

■ Language level

As default, the language level is set to [Reduction], the number of available instructions are limited. Changing the language level to [Standard] or [Extension] increases the number of available instructions.

a) Click [Mode].

b) Click [Standard] or [Extension]. The list is now increased.

Note!

Some instructions are restricted to special software applications e.g. arc welding commands are not available in handling applications. Some combinations are not possible at all.

This is controlled by the parameter file (ALL.PRM). If the number of instructions doesn't match your robot station, check that you are using the right parameter file.

■ Parameter option

For example, the SRCH tag is one of several instructions that can be added to MOVL. Because theinstruction is a parameter option, it requires the parameter file, where the flag permitting the use of the SRCH tag is valid from the programming pendant.

■ *Instruction list*

Standard set of instructions in a MOTOMAN-UP6 with arc welding application.

Reduced	Standard plus. Reduced	Extension
DOUT	AOUT	Same as Standard
DIN	ARATION	
WAIT	ARATIOF	
PULSE	NOP	
JUMP	PAUSE	
CALL	CWAIT	
TIMER	DEC	
LABLE	ADD	
COMMENT	SUB	
RET	MUL	
ARCON	DIV	
ARCOF	CNVRT	
VWELD	AND	
AWELD	OR	
ARCOUT		
ARCSET	NOT	
WVON	XOR	
WVOF	MFRAME	
ARCCTS	SETE	
ARCCTE	GETE	
MOVJ	GETS	
MOVL	SQRT	
MOVC	SIN	
MOVS	COS	
IMOV	ATAN	
SPEED	MULMAT	
REFP	INVMAT	
CLEAR	MSHIFT	
INC	MWSEND	
SET	MWWAIT	
SFTON	ARCMONON	
SFTOF	FORMCUT	
SHCKSET	PSTART	
SHCKRST	PWAIT	
	TSYNC	
	ADVINIT	
	ADVSTOP	
	SETTOOL	
	GETTOOL	

Reduced

Standard plus. Reduced
PMT
SETFILE
GETFILE
LOADJ
SAVEJ
LOADV
SAVEV
DELETEJ
SWAIT
FLOATON
FLOATOF
COMARCON
COMARCOF
COMARCSET
MEMON
MEMOF

Extension

5.7 Displaying step Nos., I/O names, or variable names

a) Click [Mode]

b) Click [Option]

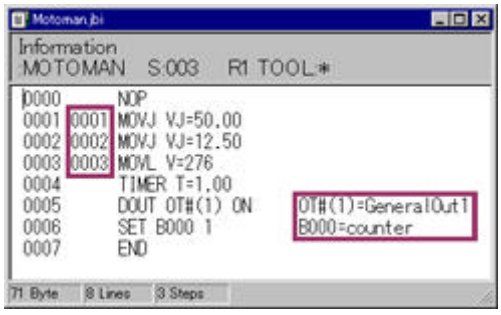
The [Option] dialog box appears.

c) Click the desired items to be displayed.

d) Set the position to displayy the I/O name or the variable name.

e) Click [OK]

Names and numbers are displayed



5.8 Opening a call jobb

This function can be used only with a CALL instruction or a JUMP instruction.

a) Move the cursor to a CALL or JUMP instruction.

b) Click [View]

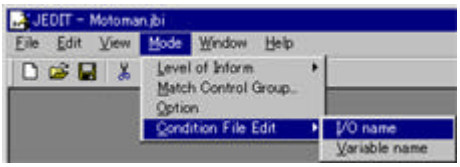
c) Click [Open call jobb]

The jobb that is designated in the CALL or JUMP instruction appears.

5.9 Changing a condition file

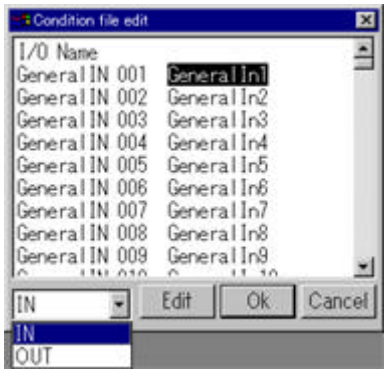
■ Changing an I/O name file (IONAME.DAT)

a) Click [Mode]



b) Click [Condition file edit] and [I/O name].

The [Condition file edit] dialog box appears.



c) Select I/O

d) Click [Edit]
The [Character edit] dialog box appears.

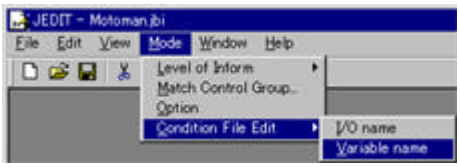
e) Enter an I/O name that has 16 characters or less.

If there is no I/O name file, a file is automatically created after entering the I/O name in step e). This I/O name file can also be used with the programming pendant in the same way as a job edited by the Job Editor can be used with the programming pendant.

■ *Changing a variable name file (VARNAME.DAT)*

a) Click [Mode]

b) Click [Condition file edit] and [Variable name]



The [Condition file edit] dialog box appears.

c) Select variable

d) Click [Edit]
The [Character edit] dialog box appears.

e) Enter a variable name that has 16 characters or less.

If there is no variable name file, a file is automatically created after entering the variable name in step e). This I/O name file can also be used with the programming pendant in the same way as a job edited by the Job Editor can be used with the programming pendant.

5.10 Editing an expression

To edit an expression, use a "SET" instruction.

To edit an expression, set the language level to "standard" or "extension".

a) Move to the adress area of the line to be inserted.

b) Press the [Space] key, or click [Edit] on the menu and then click [Insert instruction].

The [Select inst] dialog box for each group of instruction appears.

c) Select a line by pressing the cursor keys or clicking the mouse.

d) Press the [Enter] key or double-click.
*)Press the [Esc] key to exit the Add mode.

The [Select inst] dialog box appears.

e) Select a line by pressing the cursor keys or clicking the mouse.

f) Press the [Enter] key or double-click.
*) Click [..] or press the [Esc] key to return to the [Select inst] dialog box for each group of instructions.

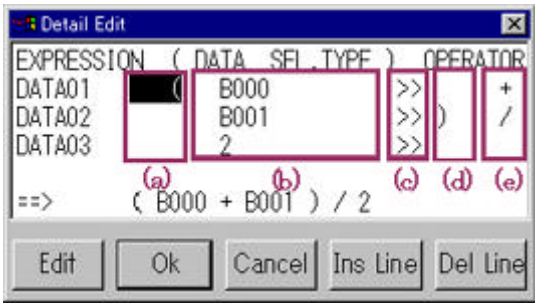
The line-edit box appears in the lower-left of the window.

g) Press the space key
The [Detail edit] dialog box for the SET instruction appears.

h) Press the [Space] key.
A selection list appears.

i) Press the [Enter] key.
*) press the [Esc] key to cancel.

The [Detail edit] dialog box for EXPRESS appears.



j) Set an expression.

k) Click [OK].
*) Displays the set expression.

l) Click "Ins line" to add the data.

m) Click "Del line" to delete the data.

Double-click the position or click [Edit] to select the following items.

(a) Left parenthesis

Each time you click or double-click [Edit] the display changes in the following order.

(•((•(((•-(•-((•-(((

(b) Data

The [Value input] box appears.

a) Enter the value

b) Click [OK]

(c) Changing the data type.

A selection list appears.

a) Use the the arrow keys, upp and down, to select the data.

b) Press the [Enter] key

c) Enter the value

d) Click [OK]

(d) Right parenthesis

Each time you click or double-click [Edit], the display changes in the following order.

)•))•)))

(e) Operator

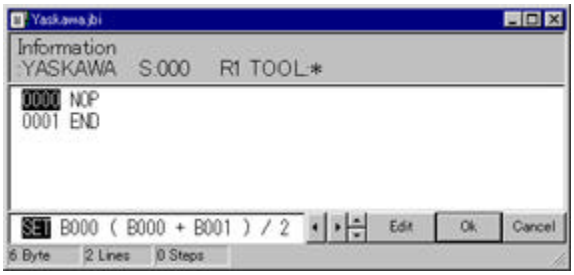
A Selection list appears.

a) Use the the arrow keys, upp and down, to select the operator.

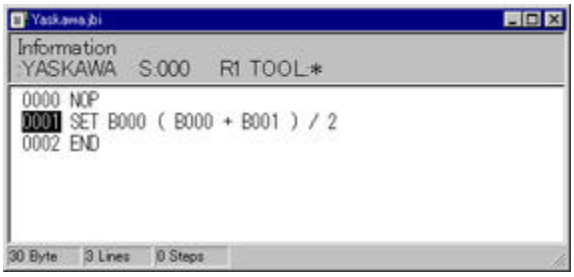
b) Press the [Enter] key.
The [Detail edit] dialog box for the SET instruction appears again.

c) Click [OK]

The line-edit box appears in the lower-left of the window.



d) Press the [Enter] key.
The changed main window appears.

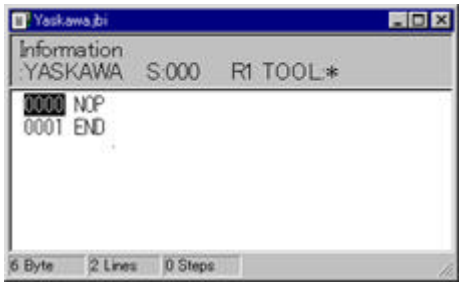


5.11 Using a macro command

By storing the macro definition file (MACRO.DAT) in the same folder as the parameter file (All.prm), the defined macro command can be used.

a) Move the cursor to the address area of the line to be added.

b) Press the [Space] key or click [Edit] on the menu and then click [Insert instruction].



The [Select inst] dialog box for each group of instruction appears.

c) Move the cursor to "MACRO" and select it by clicking it.
The [Select inst] dialog box appears.
Instructions that have been defined in the macro definition file appear. These instructions are used to add or edit the the macro caommand.

The job Editor can use a macro command but cannot create the command.
To use this function, use the parameter files that are provided with the "Macro command function" (optional).

5.12 Create a binary job

JobEditor32 can also create a binary job (*.JBB). Binary jobs are not used in the MOTOMAN XRC robot controller.

XRC robot controller uses ASCII coded jobs (*.JBI).

■ *Convert JBI to JBB*

a) Open the JBI-job to convert.

b) Click [File].

c) Click [Save As...]

d) The [Save As] dialog box appear.

e) Change file type to [JBB Files (*.jbb)].

f) Set a file name. Maximum 8 characters.

g) Click [Open]. The binary job is now displayed in the window.

Note!

The original file (*.JBI) is not overwritten. Both files exist in the same directory.

5.13 Customizing JobEditor32

■ Changing the font

The font used in JobEditor32 can be changed. Different fonts can be used in different dialog boxes.

a) Click [View].

b) Click [Font].

c) Choose the dialog box to change, [Main], [Detail] or [Input Buffer].

d) The [Font] dialog box appears.

e) Click [OK].

■ Changing background colour

The colour used in JobEditor32 can be changed. Different colours can be used in different dialog boxes.

a) Click [View].

b) Click [Back Colour].

c) Choose the dialog box to change, [Main], [Detail] or [Input Buffer].

d) The [Colour] dialog box appears.

e) Select colour from the menu.

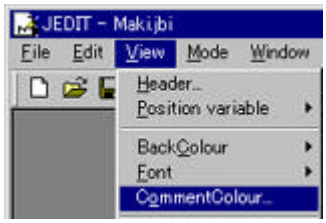
f) Click [OK].

Note!
Changing font or colour does only affect the JobEditor32 window. Text in XRC programming pendant or Job running is not affected.

■ Changing the comment color

a) Click [View]

b) Click [Comment color].
The [Color] dialog box appears.



c) Select the color

d) Click [OK].

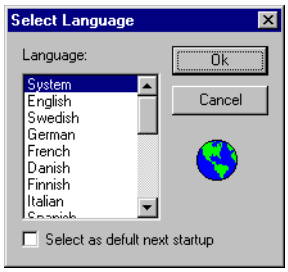
5.14 Change language

JobEditor32 is a multi language software. It is possible to switch language of menus and instructions by a simple key operation.

a) Click [View].

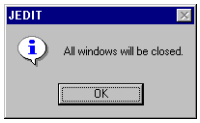
b) Click [Change language].

c) The language dialogue box appears.

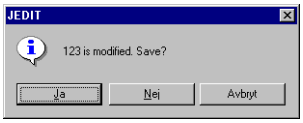


d) Select language and click [Ok].

e) A warning message is displayed. All open jobs will be closed automatically when the OK button is clicked. An ALL.PRM file must be selected again.



f) If there are unsaved changes in the open jobs, following message appears.



Yes = Save changes and close all open jobs. Language is changed.
No = Close all jobs without saving. Language is changed.
Cancel = Go back. However, the language of the menus is changed.

Note!

To get the instructions in the job files in right language, all jobs must be closed.
Language file for commands is checked at initializing of the ALL.PRM file.

Notes

Headquarters:

Sweden — **MOTOMAN** Robotics Europe AB
Box 504, SE-385 25 Torsås, Sweden
Tel: +46-486-48800, +46-486-41410

Group companies:

France — **MOTOMAN** Robotics SARL
Rue Nungesser et Coli, D2A Nantes-Atlantique, F-44860 Saint-Aignan-de-Grand-Lieu, France
Tel: +33-2-40131919, Fax: +33-40754147

Germany — **MOTOMAN** Robotec GmbH
Kammerfeldstraße 1, DE-85391 Allershausen, Germany
Tel: +49-8166-90-0, Fax: +49-8166-90-103

Germany — **MOTOMAN** Robotec GmbH
Im Katzenforst 2, DE-61476 Kronberg/Taunus, Germany
Tel: +49-6173-60-77-30, Fax: +49-6173-60-77-39

Great Britain — **MOTOMAN** Robotics UK (Ltd)
1 Swan Industrial Estate, Banbury, OXON OX16 8DJ, England
Tel: +44-1295-272755, Fax: +44-1295-267127

Italy — **MOTOMAN** Robotics Italia SRL
Via Emilia 1420/16, IT-41100 Modena, Italy
Tel: +39-059-280496, Fax: +39-059-280602

Netherlands — **MOTOMAN** benelux B.V
Zinkstraat 70, NL-4823 AC Breda, Netherlands
Tel: +31-76-5424278, Fax: +31-76-5429246

Slovenia — **RISTRO d.o.o.**
Lepovce 23, SI-1310 Ribnica, Slovenia
Tel: +386-61-861113, Fax: +386-61-861227

Spain — **MOTOMAN** Robotics Iberica S.L.
Avenida Marina 56, Parcela 90, ES-08830 St. Boi de Llobregat (Barcelona), Spain
Tel: +34-93-6303478, Fax: +34-93-6543459

Sweden — **MOTOMAN** Mecatron Robotic Systems AB
Box 4004, SE-390 04 Kalmar, Sweden
Tel: +46-480-444600, Fax: +46-444699

Distributors:

Czech Republic — **MGM Spol s.r.o.**
Trebízského 1870, CZ-39002 Tábor, Czech Republic
Tel: +420-361-254571, Fax: +420-361-256038

Denmark — **Robia A/S**
Hjulmagervej 4, DK-7100 Vejle, Denmark
Tel: +45-79428000, Fax: +45-79428001

Finland — **Robia Suomi OY**
Messinkikatu 2, FI-20380 Turku, Finland
Tel: +358-22145600, Fax: +358-22145660

Greece — **Kouvalias Industrial Robots**
25, El. Venizelou Ave., GR-17671 Kallithea, Greece
Tel: +30-1-9589243-6, Fax: +30-1-9567289

Hungary — **REHM Hegesztéstechnika Kft.**
Tápiószele, Jászberényi út 4., H-2766, Hungary
Tel: +36-30-9510065, Fax: +36-1-2562012

Israel — **KNT Engineering Ltd.**
9 Hapalmach Street, IL-Kfar Azar 55905, Israel
Tel: +972-39231944, Fax: +972-39231933

Norway — **ROBIA ASA**
Industriveien 1, NO-3300 Hokksund, Norway
Tel: +47-32252820, Fax: +47-32252840

Portugal — **Electro-Arco S.A.**
Rua Vice-Almirante Azevedo Coutinho 4, Venda Nova, PT-2700 Amadora, Portugal
Tel: +351-21-4968160, Fax: +351-21-4990319

South Africa — **Robotic Systems S.A. PTY Ltd**
P.O Box 90741, ZA-Bertsham 2013, South Africa
Tel: +27-11-4943604, Fax: +27-11-4942320

Switzerland — **Messer SAG**
Langweisenstrasse 12, CH-8108 Dällikon, Switzerland
Tel: +41-18471717, Fax: +41-18442432

MOTOMAN ROBOTICS EUROPE AB
a subsidiary of YASKAWA Electric Corporation